DEPARTMENT of ENVIRONMENTAL SERVICES
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	POWWOW POND	Lake Area (ha):	99.76
Town:	KINGSTON	Maximum depth (m):	3.2
County:	Rockingham	Mean depth (m):	1.3
River Basin:	Merrimack	Volume (m^3):	1296000
Latitude:	42°54'50" N	Relative depth:	0.3
Longitude:	71°02'08" W	Shore configuration:	3.67
Elevation (ft):	116	Areal water load (m/yr):	39.40
Shore length (m):	13000	Flushing rate (yr^{-1}):	30.30
Watershed area (ha):	8158.5	P retention coeff.:	0.39
% watershed ponded:	4.2	Lake type:	artificial

246.51 acres

BIOLOGICAL:			1 July 1998
DOM. PHYTOPLANKTON (% TOTAL)	#1		DINOBRYON 18%
	#2		FILAM. GRN SPP 17%
	#3		CERATIUM 16%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			2.18
DOM. ZOOPLANKTON (% TOTAL)	#1		NO DOMINANTS
	#2		
	#3		
ROTIFERS/LITER			13
MICROCRUSTACEA/LITER			20
ZOOPLANKTON ABUNDANCE (#/L)			33
VASCULAR PLANT ABUNDANCE			Very abundant
SECCHI DISK TRANSPARENCY (m)			1.3
BOTTOM DISSOLVED OXYGEN (mg/L)			0.2
BACTERIA (E. coli, #/100 ml)	#1		21
	#2		28
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 2.2
Hypolimnion volume (m^3) : None
Anoxic volume (m^3) : 66300

CHEMICAL:

Lake: POWWOW POND
Town: KINGSTON

			1 July 1998		
DEPTH (m)			1.5		2.8
pH (units)			6.3		6.3
A.N.C. (Alkalinity)			8.6		15.1
NITRATE NITROGEN			< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN			0.50		1.00
TOTAL PHOSPHORUS			0.011		0.026
CONDUCTIVITY (μmhos/cm)			103.5		115.4
APPARENT COLOR (cpu)			150		150
MAGNESIUM			1.29		
CALCIUM			5.2		
SODIUM			12.7		
POTASSIUM			1.33		
CHLORIDE			23		23
SULFATE			3		2
TN : TP			45		38
CALCITE SATURATION INDEX			3.4		

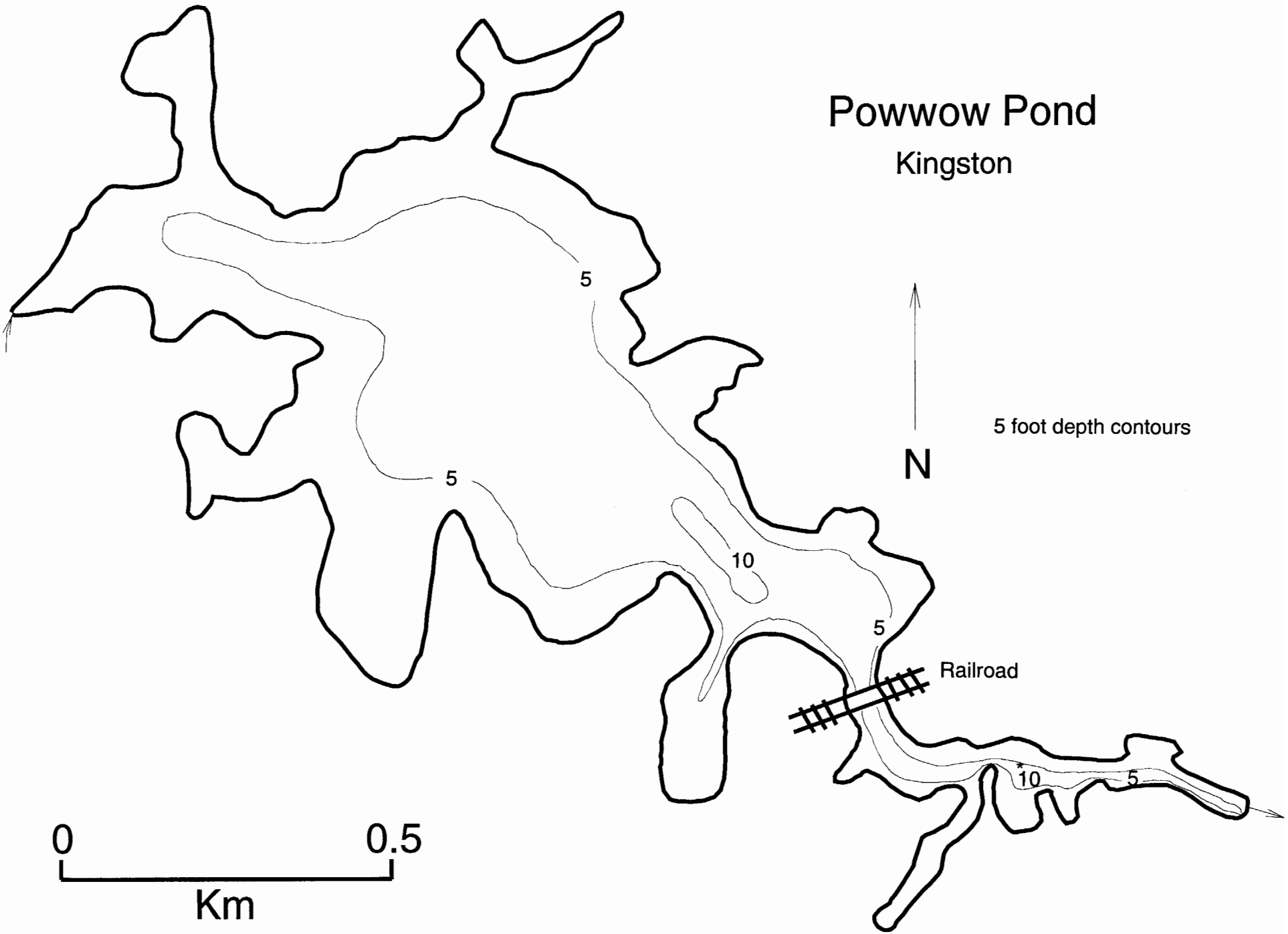
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1998

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	4	6	0	10	Eutro.

COMMENTS:

1. aka Trickling Falls.
2. No winter samples were collected because of dangerous ice conditions.
3. Powwow Pond was previously surveyed and classified in 1976. It was rated mesotrophic in 1976 but was borderline meso/eutrophic in both 1976 and 1998. Its trophic rating is based primarily on the very abundant plant growth and limited visibility.
4. Good dirt boat launch into shallow water.
5. This is a shallow, mam-made pond with dark tea-colored water. Chloride, sodium and conductivity values suggest some road salt runoff.
6. Dense development along the southern shore.
7. Inlet area is a natural wetland area.


Powwow Pond
Kingston
N
5 foot depth contours
5
5
10
5
Railroad
10
5
0
0.5
Km

FIELD DATA SHEET

LAKE: POWWOW POND
DATE: 07/01/1998

TOWN: KINGSTON
WEATHER: OVERCAST & WINDY

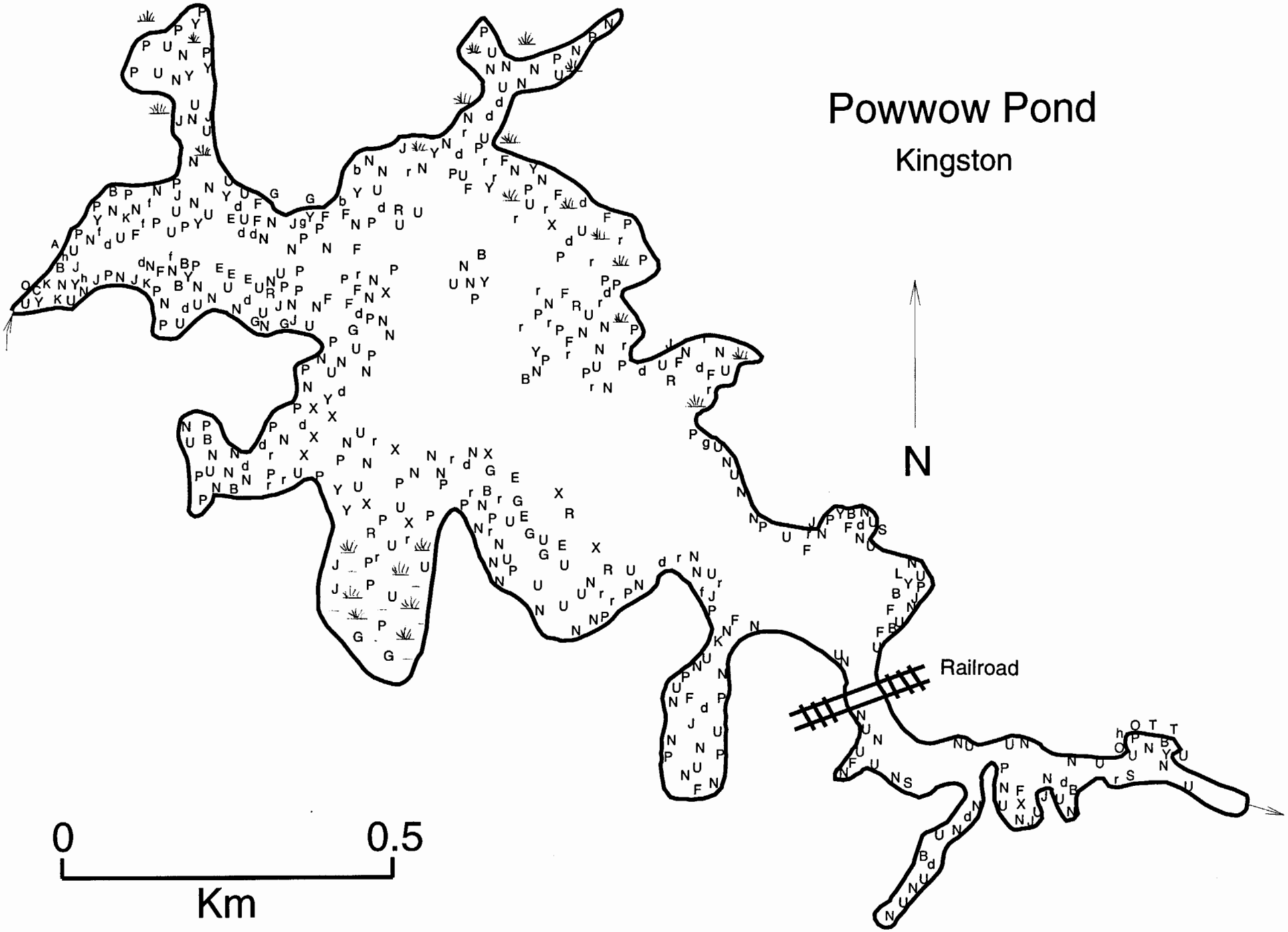
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	22.0	4.1	45 %
	0.5	22.0	4.0	45 %
	1.0	22.0	3.9	43 %
	1.5	21.1	3.6	39 %
	2.0	20.6	1.8	20 %
	2.5	17.6	0.1	1 %
	3.0	17.0	0.2	2 %

SECCHI DISK (m): 1.3
BOTTOM DEPTH (m): 3.0
TIME: 1315

COMMENTS:

Too shallow for a true, stable stratification to form, but a weak thermocline was present at about 2.2 meters and the dissolved oxygen was depleted below this depth.

*Dissolved oxygen values are in mg/L


Powwow Pond
Kingston
N
Railroad
0
0.5
Km

AQUATIC PLANT SURVEY

LAKE: POWWOW POND TOWN: KINGSTON DATE: 07/01/1998

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
O	Cephalanthus occidentalis	Buttonbush	Scattered
U	Utricularia	Bladderwort	Very abundant
Y	Nuphar	Yellow water lily	Abundant
N	Nymphaea	White water lily	Very abundant
P	Pontederia cordata	Pickerelweed	Abundant
B	Brasenia schreberi	Water shield	Common
T	Typha	Cattail	Scattered
g	Myrica gale	Sweet gale	Scattered
f		Filamentous algae	Abundant
X		Sterile thread-like leaf	Abundant
A	Sagittaria	Arrowhead	Sparse
F	Nymphoides cordatum	Floating heart	Scattered
h	Myriophyllum humile	Water milfoil	Scattered
L	Lemna	Duckweed	Sparse
d	Potamogeton nodosus	Pondweed	Abundant
C	Ceratophyllum demersum	Coontail	Sparse
J	Juncus	Rush	Very abundant
S	Sparganium	Bur reed	Sparse
r	Scirpus validus	Softstem bulrush	Common
R	Potamogeton robbinsii	Robbins pondweed	Common
K	Ranunculus	Buttercup	Sparse
G	Gramineae	Grass family	Common
b	Scirpus	Bulrush	Scattered
e	Elodea nuttallii	Waterweed	Scattered

OVERALL ABUNDANCE: Very abundant

GENERAL OBSERVATIONS:

1. Plants were very abundant with *Nymphaea* and *Juncus* dominating the floating and emergent plants and bladderwort dominating the submerged plants. Pickerelweed surrounded most of the shoreline and along the margins of open water.
2. Submerged bottom growth was present everywhere the bottom was visible.
3. Only about 25% of the pond area was navigable due to plant growth.
4. Robbins pondweed came up on the anchor at the deep spot and is likely more abundant than indicated on the map.